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(54) METHOD FOR EXTRACTING DNA FROM WHOLE BLOOD SPECIMEN AND EXTRACTION KIT

(57)Abstract:

PURPOSE: To prevent the damage and contamination and obtain the subject DNA by adding a surfactant to the whole blood specimen, destroying a hemocytic cell, destroying a nuclear membrane and a nuclear protein with the surfactant and a proteolytic enzyme, then liberating a DNA chain with a chaotropic agent and precipitating the DNA chain.

CONSTITUTION: A surfactant such as a nonionic surfactant (e.g. polyoxyethylene octylphenyl ether) is brought into contact with the whole blood specimen to destroy the cell membrane of a hemocytic cell. The exposed cell nucleus is then collected and treated with the nonionic surfactant (e.g. sodium dodecyl sulfate) and a proteolytic enzyme (e.g. proteinase K) to destroy a nuclear membrane and a nuclear protein. The resultant cell nucleus is subsequently brought into contact with a chaotropic agent (e.g. sodium iodide) to liberate a DNA chain. An alcohol (e.g. isopropanol) is then added to a solution containing the liberated DNA chain to precipitate the DNA chain. Thereby, the damage and contamination of the DNA chain in an extraction process are suppressed to readily extract the DNA useful for gene diagnosis, etc., such as genetic diseases or cancer.

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